H5N1 Influenza virus overview

24 January 2013

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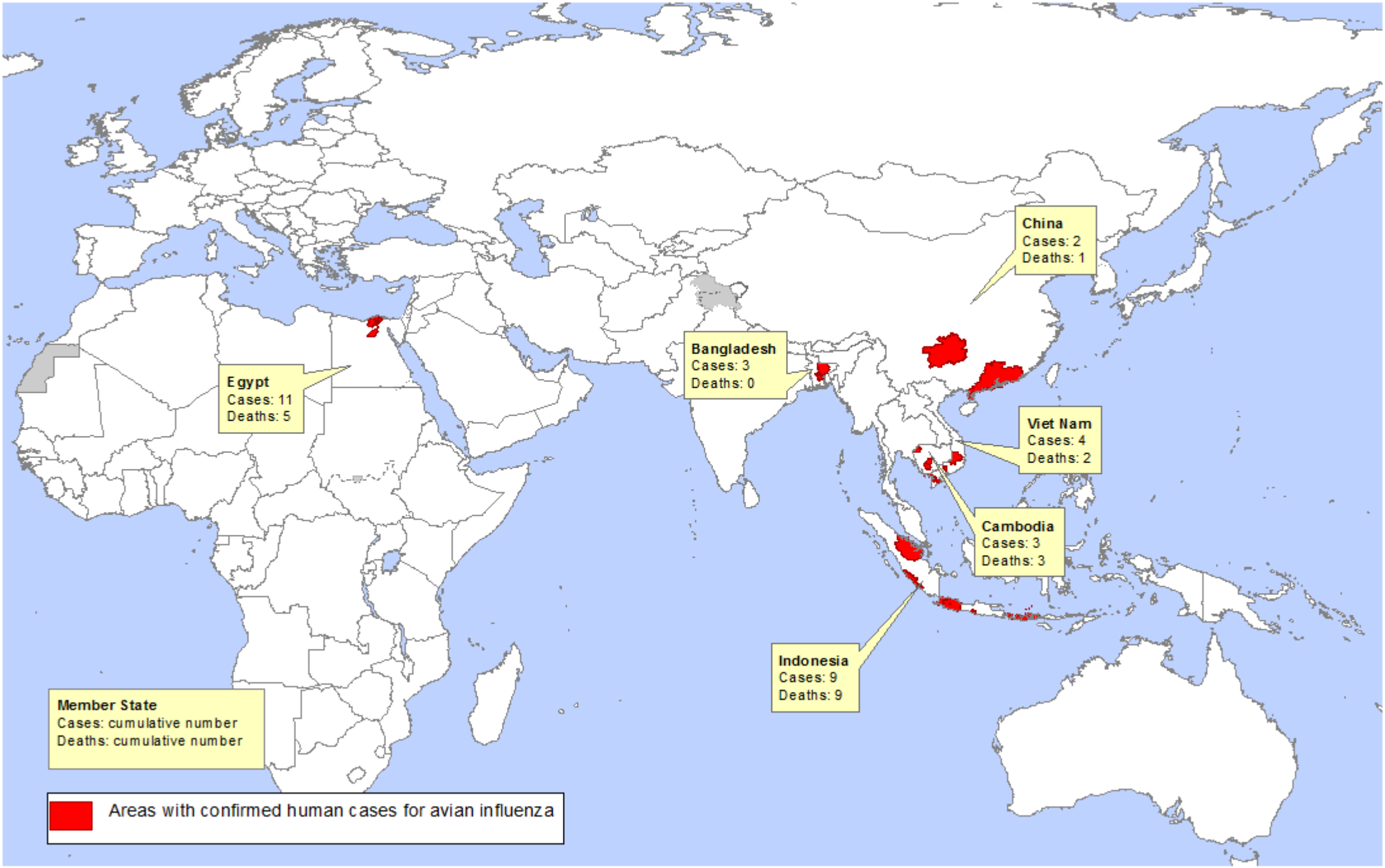
World Health Organization

Overview of H5N1 epidemiology

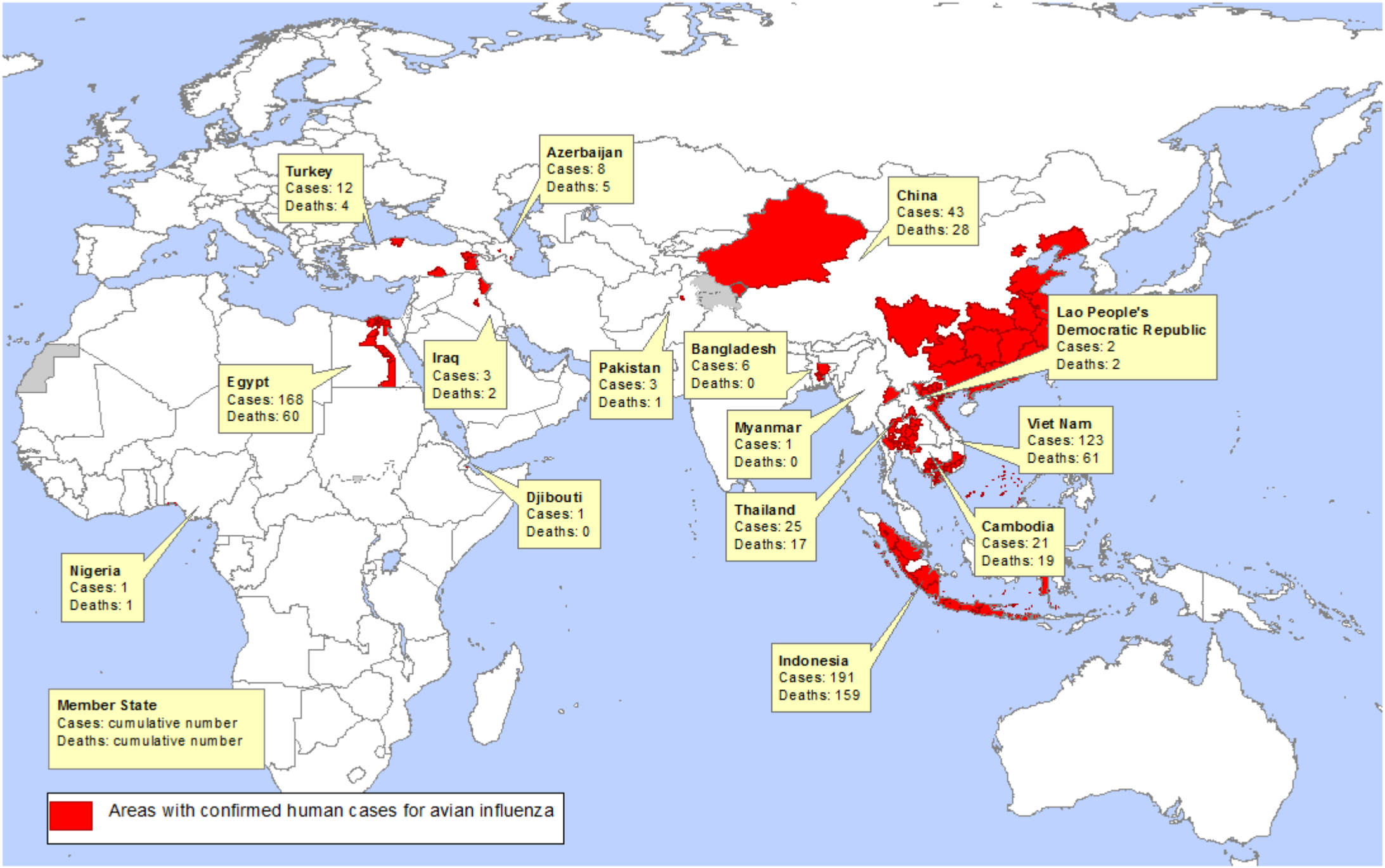
- As of 17 December 2012, 610 cases, 360 Deaths (59%)
- Cases reported in 15 countries since 2003
- H5N1 "endemic" in 5-6 countries (Egypt, Indonesia, Vietnam, China, Cambodia, Bangladesh)
- Variability in reporting to WHO.
- Variability in CFR from : 30% to more than 80 %
  - Surveillance bias?
  - Clinical management? Access to care?
  - Virus clade?
  - Genetic susceptibility? (for clusters)

Areas with confirmed human cases for avian influenza A(H5N1) reported to WHO, 2012- to-date*,



*All dates refer to onset of illness
Data as of 17 December 2012
Source: WHO/HIP

Areas with confirmed human cases for avian influenza A(H5N1) reported to WHO, 2003-2012*



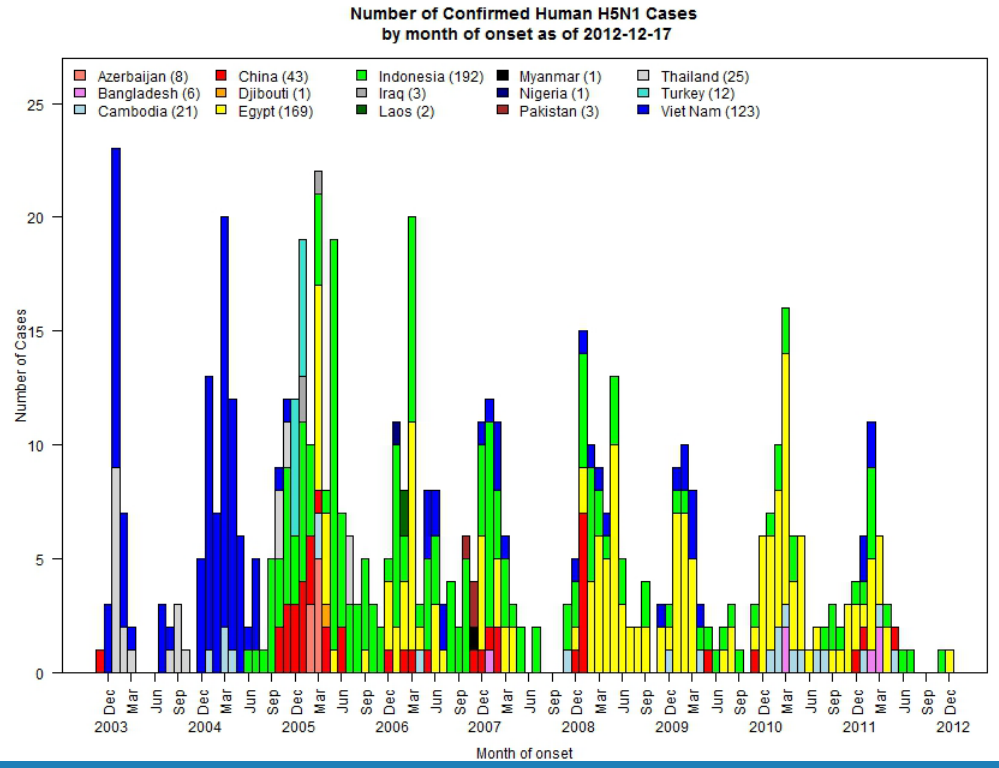
*All dates refer to onset of illness
Data as of 10 August 2012
Source: WHO/HIP

H5N1 epidemiology

- Re-emergence in 2003: 10 year later no sustained H2H
- Usually animal-human transmission or environmental transmission (aerosols)
- Under certain circumstances: cluster of cases
  - close contacts: e.g. Karo cluster (Indonesia), family cluster in Pakistan
  - genetic susceptibility?
  - It has always been difficult to disentangle common exposure from H2H transmission

H5N1 and pandemic risk

- Zoonotic and Pandemic threats from H5N1 still exist
  - Virus is still circulating widely in poultry in several countries
  - Better control of H5N1 in poultry decreases risk of zoonotic infections



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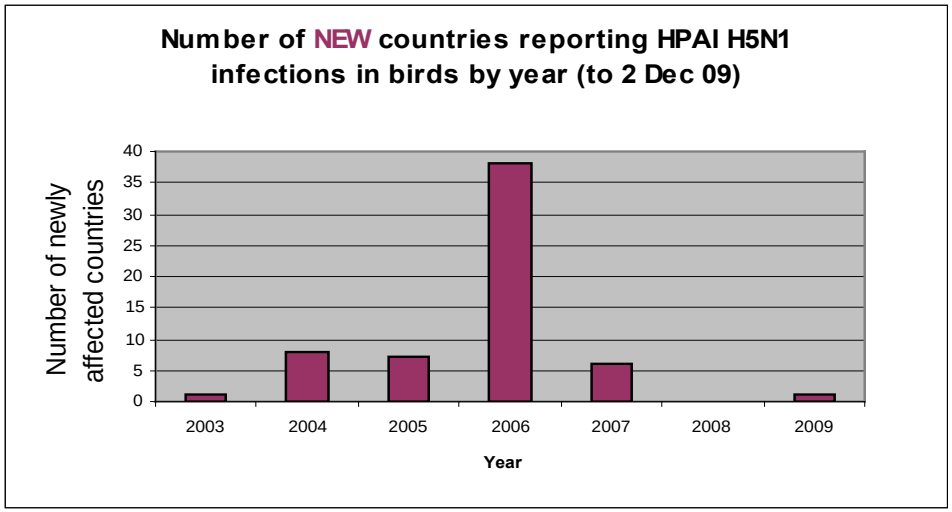
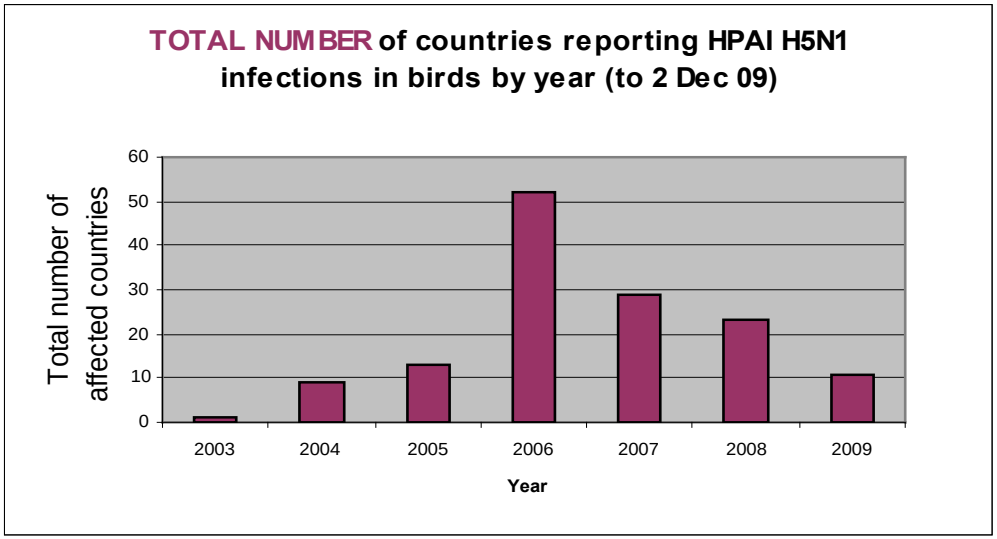
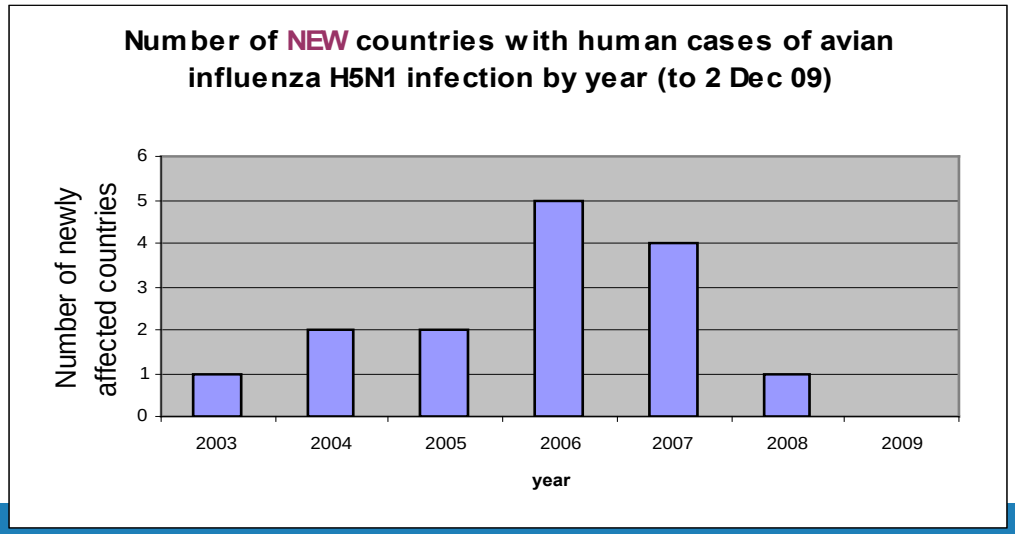
PH impact of reducing disease in animals

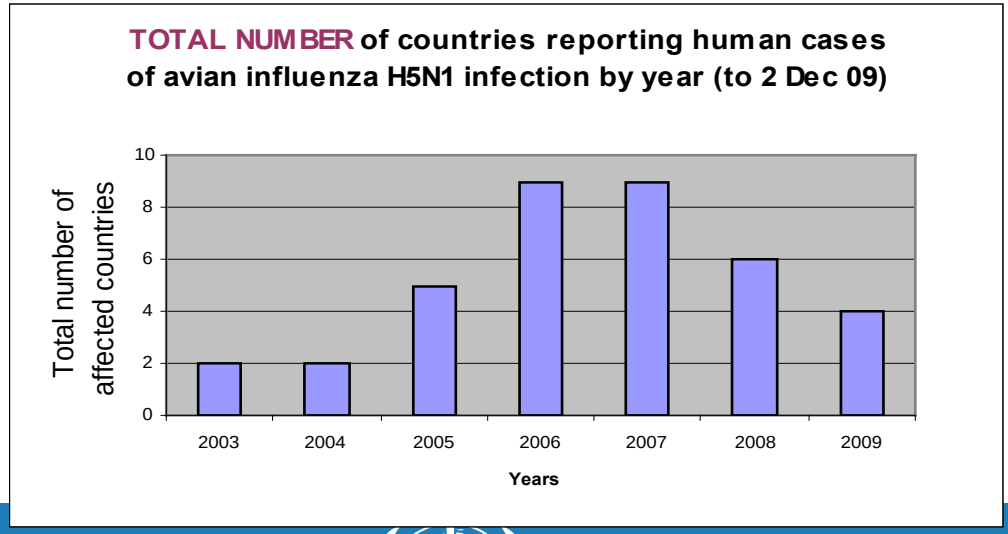
Birds





Humans





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2003 2004 2005 2006 2007 2008 2009 2010 2011

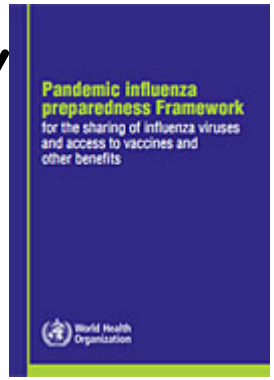
SARS

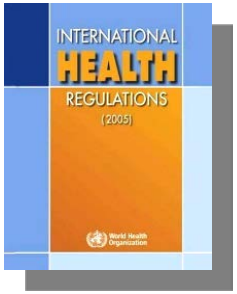
Re-emergence of H5N1

Pandemic (H1N1) 2009
April 2009-August 2010

IGM - OEWG

Endorsement of the PIP framework





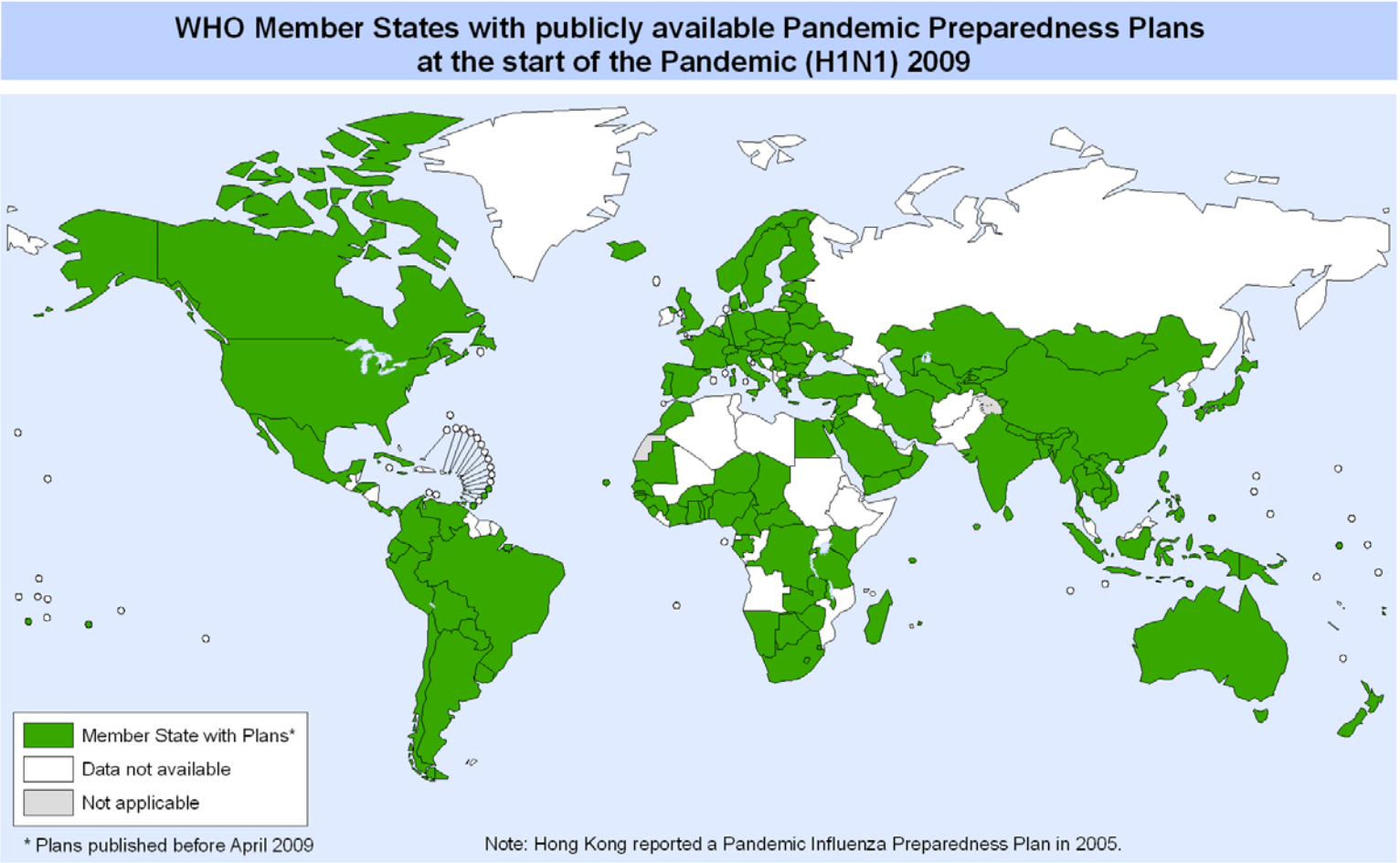
IHR revision
Includes all Public Health Emergencies of International Concern (PHEIC) (2005)

GAP
to increase access to influenza vaccine

Report of the IHR pandemic review Committee (May 2011)

Pandemic Preparedness plans

Plan for response : in 2009, more than 70% of Member States had a pandemic preparedness plan



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Strong focus on H5N1 before 2009

	Number of countries	number of PP plans accessed / analyzed	% PP plans analyzed focusing on H5N1
African Region	46	29 (63%) / 29	93%
Region of the Americas	35	24 (69%) / 20	55%
Eastern Mediterranean region	21	12 (57%) / 10	80%
European Region	53	43 (81%) / 32	19%
South East Asia Region	11	11 (100%) / 10	90%
Western Pacific Region	27	18 (63%) / 18	50%

Global landscape (1)

- Perception of the risk by WHO Member States:
  - Influence by the experience of the H1N1 2009 pandemic
  - Influenced by the recent outbreak of SOIVtr H3N2 in the USA-2011
  - The emergence of the novel coronavirus in Saudi Arabia- Jordan-Qatar (2012)
- The revision of pandemic preparedness plans are done accordingly
- Perception of other stakeholders
  - DURC issue with H5N1 research in January 2012 - Research and public health purposes are being discussed.

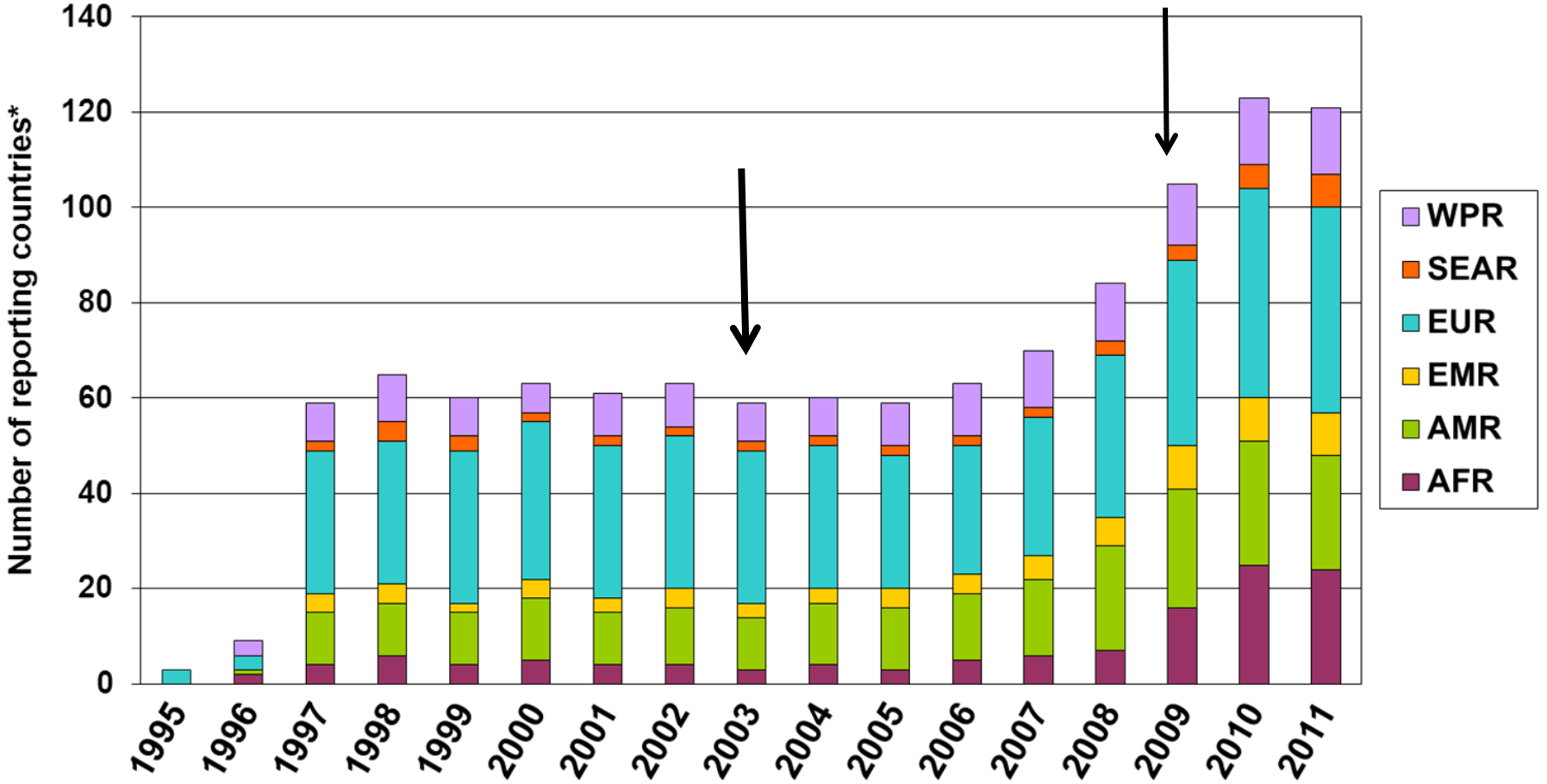
Global landscape (2)

- Vaccine production has increased significantly
  - Seasonal vaccine production has increased from 350 million doses in 2006 to around 900 million doses by 2009 (Source: Collin N, de Radiguès X. Vaccine production capacity for seasonal and pandemic (H1N1) 2009 influenza. *Vaccine*, 2009, 27:5184–5186.)
  - The estimated global annual capacity for seasonal trivalent influenza vaccine production in 2011 was about 1400 million doses (Source: Global production capacity of seasonal influenza vaccine in 2011 Jeffrey Partridge, Marie Paule Kieny, vaccine 2012 to be published)
- Progress is made with the development of new influenza vaccine: 7 technologies available: Egg based, cell-culture, live, recombinant-protein & VLP, universal protein, viral vectored and DNA vaccines.
- The implementation of the PIP framework adopted in May 2011 will facilitate the sharing of viruses and sharing of benefits related to the sharing of viruses. http://www.who.int/influenza/pip/en/

Global landscape (3)

- The "discovery "of antivirals as public health tools: when used early good results in reducing mortality especially in high risk groups.
- WHO is replenishing the global antiviral stockpile
- Improvement of influenza surveillance at global level (GISRS-140 NICs, 120 countries)

Number of countries* reporting to FluNet in the six WHO regions



Data source: FluNet (www.who.int/flunet), GISRS *(snapshot 17 January 2012)*

***Countries, areas or territories**

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Public health global research agenda on Influenza

http://www.who.int/influenza/resources/research/en/

Stream 1	Reducing the risk of emergence of pandemic influenza
	1.1 Factors associated with the emergence of influenza viruses with zoonotic or pandemic potential
	1.2. Factors associated with human infection at the human-animal interface
	1.3. Surveillance at the human-animal interface
	1.4 Preventive measures to reduce the risk of emergence of zoonotic and pandemic influenza viruses

Thank you

谢谢

Merci

Obrigada

Gracias

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